

IN THE CLAIMS:

1. (Currently Amended) A method of redrawing a visual display of graphical data whereby a current display is replaced by an updated display, comprising,
in response to a redraw request, ~~immediately~~ replacing the current display with a first approximate representation of the updated display, wherein said first approximate representation comprises a scaled version of a reduced resolution bitmap representation of said updated display,
generating a final updated display, and
replacing the approximate representation with the final updated display.
2. (Currently Amended) A method as claimed in claim 1, including replacing said first approximate representation with one or more successive improved approximate representations of the updated display before replacing ~~the a~~ last displayed approximate representation with ~~the a~~ final updated display.
3. (Currently Amended) A method as claimed in claim 1, ~~or claim 2~~, wherein the replacement of the current display by said first and any subsequent approximate representations is performed in parallel with generating said final updated display.
4. (Cancelled)
5. (Currently Amended) A method as claimed in claim 1 ~~Claim 4~~, wherein a subsequent improved approximate representation comprises said scaled version of a reduced resolution bitmap representation of said updated display with vector outlines superimposed thereon.
6. (Currently Amended) A method as claimed in claim 1, further comprising ~~of~~ generating variable visual representations of graphical data, ~~comprising by~~ dividing said graphical data into a plurality of bitmap tiles of fixed, ~~predetermined~~ size, storing said tiles in an indexed array and assembling a ~~required~~ visual representation of said graphical data from a selected set of said tiles.

7. (Original) A method as claimed in claim 6, wherein a current visual representation of said graphical data is updated by removing redundant tiles from said selected set and adding new tiles to said selected set.

8. (Currently Amended) A method as claimed in claim 6 ~~or in claim 7~~ wherein said array of tiles represents graphical data from multiple sources.

9. (Original) A method as claimed in claim 7, wherein said multiple sources include applications running on a data processing system and an operating system of said data processing system.

10. (Currently Amended) A method as claimed in ~~any one of claim 6 to 9~~, including processing subsets of said tiles in parallel.

11. (Currently Amended) A method as claimed in ~~any of claims 1 to 5~~ claim 6 wherein said ~~tiles visual displays~~ are assembled ~~from tiles in accordance with any of claims 6 to 10~~ into a visual display, such that a current display is replaced by an updated display, comprising a first approximate representation of the updated display.

12. (Currently Amended) A method as claimed in claim 1, wherein the graphical data corresponds to a digital document of processing a digital document, said document comprising composed of a plurality of graphical objects arranged on at least one page,

further comprising:

dividing said document into a plurality of zones; and,

for each zone, generating a list of objects contained within and overlapping said zone.

13. (Currently Amended) A method as claimed in claim 12, wherein a visual representation of a part of said document is generated by determining which of said zones intersect said part of said document, determining a set of said listed objects associated with said intersecting zones that are contained within or overlap said part of said document, which intersect said part of said document and processing said set of listed objects to generate said visual representation.

14. (Currently Amended) A method as claimed in claim ~~11~~ or claim 12, wherein visual representations of said document are generated ~~by means of a method as claimed in any one of claims 6 to 10~~ having a current display be replaced by an updated display, comprising a first approximate representation of the updated display.

15. (Currently Amended) A method as claimed in claim 12, further comprising dividing the graphical data into a plurality of bitmap tiles of fixed size, storing said tiles in an indexed array and assembling the visual representation of said graphical data from a selected set of said tiles wherein each of said zones corresponds to at least one of said tiles.

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16 - 48. (Cancelled)

49. (New) A handheld device having a graphical interface capable of redrawing graphical data, comprising

a display memory for storing data representative of a document being displayed,

a second memory for storing a scaled version of a reduced resolution bitmap representation of said document being displayed, and

a module capable of detecting an instruction to alter an aspect of the document being displayed, and in response thereto replacing the current display with the reduced resolution image, generating a final updated display, and replacing the reduced resolution bitmap representation with the final updated display.

50. (New) A device according to claim 49, further comprising

a processor for replacing said first approximate representation with one or more improved approximate representations of the updated display.

51. (New) A device according to claim 49, wherein an improved approximate representation includes said scaled version of a reduced resolution bitmap representation of said updated display.

52. (New) A device according to claim 49, further including
a processor for:

generating variable visual representations of graphical data;
for dividing graphical data into a plurality of bitmap tiles of fixed size;
storing said tiles in an indexed array; and
assembling a visual representation of said graphical data from a selected set of
said tiles.

53. (New) A method according to claim 7, comprising the further step of updating the indexing of said array to remap tiles in the array to locations on the display.

54. (New) A method for generating a visual representation of a part of a digital document, said document composed of a plurality of graphical objects arranged on at least one page, the method comprising:

dividing said document into a plurality of zones;
for each zone, generating a list of objects contained within and overlapping said zone;
determining which set of said zones intersect said part of said document;
determining a set of said listed objects associated with said intersecting set of zones
which are contained within or overlap said part of said document, and:
processing said set of listed objects to generate said visual representation.

55. (NEW) A method of claim 1, wherein a view of a bitmap is updated by scaling the bitmap from a first resolution to a second resolution using interpolation.

56. (NEW) A method as claimed in claim 1 wherein the first approximate representation of said updated display is generated and stored prior to the redraw request.

57. (NEW) A method as claimed in claim 56 wherein replacing the current display with the first approximate representation of the updated display further comprises increasing the size of the stored first approximate representation by a scaling factor while maintaining the resolution of the first approximate representation, thereby generating the scaled version of the reduced resolution bitmap representation.

58. (NEW) A method as claimed in claim 1, wherein the visual display includes a first image and wherein the updated display includes a second image.

59. (NEW) A method as claimed in claim 58, wherein the second image is a modified version of the first image.

60. (NEW) A method as claimed in claim 58 wherein the second image is a different image than the first image.

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